STATE OF MICHIGAN
DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY
LANSING

GRETCHEN WHITMER
GOVERNOR

LIESL EICHLER CLARK
DIRECTOR

May 15, 2019

VIA E-MAIL AND U.S. MAIL

Mr. Charles A. Uhlarik, Chief
Environmental Analysis Branch
U.S. Army Corps of Engineers, Detroit District
U.S. Department of the Army
477 Michigan Avenue
Detroit, Michigan 48226-2550

Dear Mr. Uhlarik:

SUBJECT: Environmental Impact Statement (EIS) Scoping Comments for the Grand River Habitat Restoration and Invasive Species Control Project, Grand Rapids, Michigan; *Federal Register* Document Number 2019-04864

Thank you for providing the State of Michigan the opportunity to comment on the scope of the EIS for the proposed Grand River Habitat Restoration and Invasive Species Control Project. Staff from both the Michigan Department of Natural Resources (MDNR) and the Michigan Department of Environment, Great Lakes, and Energy (EGLE) have been involved with the project since its inception and kickoff meeting in 2011. The two departments share similar goals for Michigan's rivers and streams.

Permits from the state will be required for the proposed project, including (but not necessarily limited to) permits under Part 31, Water Resources Protection; Part 301, Inland Lakes and Streams; Part 303, Wetlands Protection; and Part 315, Dam Safety, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. EGLE, in coordination with the MDNR, will be responsible for ensuring the project uses feasible and prudent alternatives to avoid and minimize impacts. The state permitting point of contact will be Mr. Lucas A. Trumble, P.E., Hydrologic Studies and Dam Safety Unit, Permits Section, Water Resources Division, EGLE. He can be contacted at trumblel@michigan.gov or 517-420-8923.

The Notice of Intent (NOI) placed in the *Federal Register* on March 15, 2019, describes the proposed project as a multipurpose restoration project in the Grand River in downtown Grand Rapids, Michigan. The stated intent of the project is to restore, enhance, and maintain the rapids in the Grand River from upstream of Ann Street to Fulton Street and may include habitat, recreation, and invasive species control features. The request for comment in the NOI states the following:

> The USACE, Detroit District is issuing this notice, on behalf of the GLFC [Great Lakes Fishery Commission] to: (1) Inform other Federal and state agencies, tribes, and the public of their plan to analyze effects related to implementation of the Grand River Habitat Restoration and Invasive Species Control Project in Grand Rapids, Michigan; (2) obtain suggestions and information that may inform the scope of issues and range of alternatives to evaluate in the draft EIS; (3) request input on potential effects to federally-listed endangered species and

their critical habitat in accordance with the Endangered Species Act; and (4) provide notice and request input on potential effects on historic properties in accordance with Section 106 of the National Historic Preservation Act (NHPA).

The MDNR and EGLE (the Departments) respectfully submit the following comments in response to the NOI. These are identified and formatted below as concerns and recommendations for addressing each concern.

Feasible and Prudent Alternatives:

1. Concern: In accordance with state law, the proposed activities in wetlands, lakes, and streams must avoid and minimize negative impacts to public health and safety, flooding, cultural resources, natural resources, aquatic life and habitats, recreation uses, water quality, aesthetics, riparian rights, and the public trust. State law also requires that feasible and prudent alternatives that avoid and minimize impacts be evaluated and implemented.

   Recommendation: The Departments recommend that the National Environmental Policy Act (NEPA) process incorporates these requirements so that the selected alternative will be permittable under state law. The Departments recommend that alternatives explored include, but not be limited to: the restoration of the historic river channel and floodplains; the construction of natural channel design structures that enhance stream function and other alternatives that would enhance fish and aquatic organism passage, sediment and material transport, recreation, and navigation; the improvement of flood conveyance, public safety, and channel stability; and the protection of adjacent wetlands and other natural resources, cultural resources, and land uses.

Cumulative Impacts:

2. Concern: It is the understanding of the Departments that there are two adjacent projects on the Grand River currently being evaluated under separate NEPA processes. The two projects being the Grand River Habitat Restoration and Invasive Species Control Project from Anne Street to the 6th Street Dam and the "RCPP Reach" project ranging from I-196 to Fulton Street. Though these two projects are being considered separately under NEPA, the state permitting process will require that cumulative impacts from the two projects are considered and that permit decisions for one or the other, or both, projects consider those cumulative impacts.

   Recommendation: We recommend, that where there is overlap in the NEPA processes for the two projects, cumulative impacts from both projects be considered for each alternative.

In-Stream Habitat/Channel Restoration:

3. Concern: The NOI states that only one percent of riparian areas in the lower peninsula of Michigan are comprised of rapids-type habitat. While obvious that the Grand River and its floodplain have been heavily impacted through the development of the Grand Rapids area, the extent of in-channel modifications and augmentation of the historic limestone bedrock rapids has not been thoroughly defined. Though most of the former floodplain areas of the Grand River have been filled and developed, research of historic documents indicates that the bedrock stream channel bed through the downtown Grand

Rapids area has remained largely undisturbed, except for two quarry areas near Leonard and Quarry Streets.

Recommendation: The Departments support the full consideration and selection of an alternative in the NEPA process that would restore, to the extent possible, the natural bedrock rapids-type habitat that existed prior to construction of the beautification dams and the 6th Street Dam. Additional data collection and mapping of the existing bedrock below any fill and sediments that have been deposited since the dams were constructed would need to be conducted. High-gradient habitat is naturally limited in Michigan, and the Departments have significant concerns with the development of rapids-type habitat that is not typically found in Michigan streams. Alternatives that restore the channel to a natural, stable channel form that is found elsewhere in Michigan should be considered. Furthermore, a natural, stable stream reach from Michigan should be used as a reference for design alternatives.

4. Concern: The proposed Grand Rapids Whitewater (GRWW) design includes large amounts of cobble and boulder fill for the creation of several recreation structures. These large volumes of fill would be expected to have great impact on flood conveyance, natural hydraulics, and existing in-stream habitat, including several federal and state listed mussel species. Additionally, cobble and boulder fill are not consistent with the limestone bedrock outcroppings that comprised the historic rapids in the Grand River in this reach.

   Recommendation: Alternatives involving less fill should be considered in the NEPA process. Such options would have the potential to limit impacts to existing habitat and restore historical habitat that has been compromised by channelization and the installation of dams along the Grand River. An alternative that would expose the existing bedrock rapids (where intact) and restore the rapids where they have been compromised, would have fewer negative impacts on habitat and would more closely represent the historic Michigan conditions. Such an alternative would also be expected to reduce flooding, increase safety, and have fewer negative impacts on existing cultural resources that exist in and around the Grand River.

5. Concern: For the last decade, the Departments have worked jointly to develop and promote policies that emphasize natural stream function and natural channel design techniques for projects that seek to alter stream channels. Furthermore, the Departments promote channel alteration strategies that are designed to emulate natural, stable stream conditions found in Michigan rivers. This approach has been widely successful and provides a high level of confidence that fish, mussels, and other aquatic organisms can survive and thrive (e.g., spawning, migration, and feeding activities are supported) within the restored channel.

   Recommendation: The Departments recommend the full consideration and evaluation of alternatives for river restoration in the NEPA process where the design emulates natural, stable stream conditions found in Michigan streams. The Departments support alternatives that return as much of the river as possible to its historic and naturally free-flowing condition, where channel flows are unmodified and unencumbered by artificial structural impediments. The design should avoid the necessity of in-stream structure maintenance and/or woody debris removal, to the extent possible, as maintenance activities can cause additional impacts to the stream channel and aquatic organisms. In-channel structures for habitat and/or recreation should focus on effective and subtle

dissipation of energy, rather than larger artificial punctuated drops that may lead to unanticipated adverse impacts (e.g., instability of in-channel structures, artificially enhanced hydraulics that may risk user safety, etc.). In-stream structures should emulate natural conditions, to which the aquatic organisms of Michigan have evolved. Examples of natural limestone bedrock rapids can be found in the St. Mary's River, Ocqueoc River, and Milligan Creek, among others.

6. Concern: Man-made materials such as concrete and grout are not compatible with natural stream function and present long-term maintenance and safety concerns.

   Recommendation: Alternatives that utilize natural materials should be considered in the NEPA process.

7. Concern: The Departments are concerned about impacts to channel stability associated with activities that would include excavation or dredging of the underlying bedrock stream bed, including placement of temporary construction cofferdams in areas of underlying bedrock and rock structures placed atop underlying bedrock.

   Recommendation: Alternatives that eliminate, or limit to the extent possible, any disturbance or modification of the existing bedrock channel bed should be considered in the NEPA process.

Recreational Uses:

8. Concern: The Departments are concerned with prioritization of certain user groups and potential conflicts between groups that utilize the Grand River in the project reach.

   Recommendation: Negative impacts to recreational uses should be avoided and minimized where possible, and specific user groups should not be inappropriately prioritized over others. Alternatives considered should be assessed for both positive and negative impacts to the recreational uses of the Grand River. These uses include, but are not limited to, fishing, wading, hiking, boating, canoeing/kayaking, and floating. The Departments recommend a design that supports and benefits as many recreational user groups as possible. Potential conflicts between user groups should be considered. Review of available literature regarding user conflicts could be beneficial in this evaluation.

Threatened and Endangered Species:

9. Concern: The NOI states that the project, if implemented, is expected to adversely impact the existing healthy mussel populations, which includes the federally listed endangered scaleshell and snuffbox mussels and several state-listed mussel species. This reach of river is also known habitat for the state-threatened Lake Sturgeon and River Redhorse. State and federal laws require that impacts to state and federal species be avoided and minimized.

   Recommendation: The Departments recommend the selection of an alternative that avoids and minimizes the direct and indirect mortality of freshwater mussel species and their host fish species, as well as the Lake Sturgeon and River Redhorse, and the loss or degradation of their habitat. As stated above, a design that emulates natural, stable stream conditions found in Michigan will provide a high level of confidence that fish,

mussels, and other aquatic organisms can survive and thrive within the restored channel.

Flooding, Public Health, and Safety:

10. Concern: Any alternative considered will have the potential to impact flood conveyance and storage. The NOI states that the project must maintain or reduce the risk of flooding upstream of the project area. This is consistent with state law.

    Recommendation: Many areas throughout downtown Grand Rapids and upstream are prone to flooding. The Departments recommend that alternatives to improve flood conveyance and storage are considered. All hydraulic models used to aid design should show agreement with each other and be acceptable to the State of Michigan. These models create the foundation for analysis of flood impacts, user safety, and impacts to aquatic resources.

11. Concern: An alternative designed predominantly to increase recreational boater use of the Grand River could also increase risk to public health, safety, and welfare, if not properly considered and designed.

    Recommendation: Alternatives should be evaluated for safety of all recreational user groups. Depths and velocities for different river flows throughout the channel should be evaluated and be appropriate for the diverse recreational uses on the river. Designs should include strategic access points that will allow emergency personnel to access recreational areas by boat when a swift water rescue is needed.

12. Concern: Development of the project's targeted recreational boater opportunities increases the likelihood of partial and full body contact with surface waters. Available water quality data indicates that *E. coli* bacteria may be present at levels that could be incompatible with partial and full-body contact recreation, at certain times. These increases in bacteria levels would typically coincide with flows that are likely to be attractive for recreational boaters.

    Recommendation: For alternatives that result in partial or full body contact recreational activities, water quality should be evaluated with regards to human health risk. The Departments do not support partial or full body contact recreation in areas where this designated use is not supported.

Fish Passage and Residence:

13. Concern: The Grand River in Grand Rapids currently supports a healthy population of both resident and migratory fish species. The NOI states that the proposed project must provide for fish passage into upstream areas. Artificial hydraulics like those found in typical whitewater parks have been the subject of academic studies. The literature indicates that whitewater hydraulics are unfavorable for resident fish habitat and fish passage.

    Recommendation: The Departments recommend alternatives that allow for unimpeded movement of all life stages of all fish species supported in this reach. Alternative designs should enhance fish habitat, not create conditions known to be harmful to fish. In-stream structures require evaluation for fish passage likelihood and habitat provision

for a suite of species found in the Grand River that represent benthic, pool, and riffle/run dwelling species. Any analysis, such as a Habitat Suitability Index, should then be corroborated in the literature for like species in like structures. This analysis should include evaluation of passage and favorable habitat for known host fish species and the diverse freshwater mussel population found in the Grand River. More information regarding mussels and their hosts in the Grand River is available from the ongoing Biological Assessment/Biological Opinion process being led by the U.S. Fish and Wildlife Service. The ability of fish to move upstream and within the river channel should be evaluated for any alternatives that include in-channel structures.

Alternatives considered should target velocities less than three (3) feet per second, and head loss should be less than 0.7 feet for passage of resident fish species. Adequate modeling demonstrating depth, velocity, and Froude number should be used to evaluate fish passage. As fish passage is not only based on physical ability but also on behavioral cues, circulation pathways of flow along the channel margins and face at in-channel structures should also be considered. For in-channel structures, the proportion of the channel width that meets fish passage criteria described above, and is available for fish passage, should be reported compared to total channel width.

For any alternative that includes in-channel structures that could be considered to produce "whitewater" class type rapids, the Departments suggest that a review be conducted of existing whitewater structures in Michigan and other states to see if fish passage has been successfully achieved. In particular, work conducted by Colorado State University, Colorado Division of Parks and Wildlife, and Nevada Fish and Game on the Truckee River (for example) should be reviewed.

Monitoring and Maintenance:

14. Concern: With any stream restoration, there is risk that the constructed channel, in-stream structures, bank treatments, and floodplain grading will not remain stable after construction and may not perform as intended.

    Recommendation: Any alternative selected should include a plan for post-construction monitoring and performance standards to ensure that anticipated stability and ecological benefits are being achieved. Corrective actions should be implemented when performance standards are not met.

15. Concern: Whitewater structures, especially those using artificial materials such as concrete, grout, steel reinforcing bars, etc., require maintenance over time. This maintenance will result in additional cost to the public and would result in additional impacts to the stream.

    Recommendation: The need for future in-channel maintenance activities should be evaluated for all alternatives considered, as these maintenance activities could impose cumulative and/or secondary impacts on mussels and their critical habitat, aquatic habitat for fish, channel stability, fish passage, etc.

    A natural, ecologically healthy river channel contains woody debris, including large pieces of wood that are typically transported within the channel, deposited, and stored. This woody material supports healthy populations of fish and macroinvertebrates and helps to create diverse bedforms and microhabitats within the channel. Maintenance

activities that seek to alter the natural transport and storage of large woody material within the channel may impact the health and stability of the stream and should be considered cumulative and/or secondary impacts. Similar maintenance issues may be seen with sediment and whitewater structures. Sediment accumulation that may occur could potentially increase flood stage and interfere with the functionality of in-channel recreation. Similarly, whitewater structures made of rock are likely to shift and move over time. These issues may lead to the desire to enter the channel on a routine basis to remove accumulated sediment and repair and stabilize structures, resulting in continued impacts to the physical and biological components of the river. The Departments recommend that these impacts be evaluated so that they can be avoided and minimized.

16. Concern: The Departments are concerned about the long-term sustainability of alternatives.

    Recommendation: Alternatives should be evaluated for how they will perform and influence the stream channel over time. Natural structures, developed to emulate natural, stable stream forms, should not negatively influence the stream channel as they are moved by the river over time and various flood events. Structures that are not intended to move naturally with the river will require long-term maintenance or will be subject to failure. The Departments are concerned that structures that are not compatible with the natural environment will eventually fall into disrepair and become an eyesore, safety hazard, or nuisance necessitating removal at public expense.

Sediment Transport:

17. Concern: A healthy river can transport the sediment it receives from upstream without aggrading or degrading. It is important for river channel stability and ecological function that the channel is able to transport sediment, and the Departments have several concerns related to this.

    Recommendation: Alternatives should be evaluated for how sediment will be transported through the river channel, including any areas where sediment is expected to deposit or aggrade, or areas where degradation may be expected to occur. Areas of deposition, areas where substrate will be consistently moved and redeposited, and areas of downcutting should be evaluated with regards to effects on in-channel habitat, mussels, channel stability, functionality and stability of any in-stream structures, flood conveyance, and projected maintenance to any in-stream structures. Negative impacts to sediment transport should be avoided and minimized.

    Because sediment has been stored above the beautification dams and 6th Street Dam, this sediment may be mobilized within the stream channel as these structures are removed. Mobilization of this sediment should be evaluated, and measures should be implemented to avoid and minimize impacts from the downstream transport of this sediment and to control turbidity during in-channel construction activities.

Wetlands:

18. Concern: Alteration of the stream channel and/or its floodplain could result in impacts to adjacent wetland areas.

Recommendation: Any potential impacts to these resources should be evaluated and impacts should be avoided and minimized to the extent possible.

Lamprey Barrier:

19. Concern: The alternative design proposed by the Grand Rapids Whitewater (GRWW) group includes construction of an adjustable hydraulic structure (AHS) at the head of the historic rapids, approximately one mile upstream from the existing 6th Street Dam near Ann Street, and placement of large volumes of cobble and boulder in order to create a series of recreational structures through the project reach. There are concerns with using an Obermeyer weir structure with inflatable bladders to control the gates of a structure that will perform the critical services of lamprey barrier, flood control, and fish passage. There are additional concerns over the stability of the AHS and downstream channel if the AHS functions as a "velocity barrier," generating high velocity flow in the Grand River.

    Recommendation: Alternative locations of the lamprey barrier(s) should be evaluated, and a location(s) be selected that maximizes the stated project goals, including habitat restoration and invasive species control. As for the barrier itself, several options need evaluation, including a fixed-crest structure and other adjustable structures such as drum gates or hydraulic gates. The option that proves most reliable and best suited for project goals, while avoiding and minimizing impacts, should be chosen as the preferred structure. Preference should be given to alternatives that provide increased lamprey blockage above the current level provided by the 6th Street Dam. Design of the new lamprey barrier (and interaction with any downstream in-channel features) should be evaluated against project goals to maximize habitat restoration, fish passage, and invasive species control for protection of the Great Lakes fishery.

20. Concern: Public pressure to decrease upstream flooding during lamprey migration periods may result in decreased effectiveness of an adjustable barrier.

    Recommendation: To the extent possible, any design for a new barrier should not only incorporate the ability to effectively block lamprey, but also maintain or improve flood conveyance over existing conditions. This would reduce public pressure to "lower gates" during floods and, thus, decreasing the effectiveness of the barrier. The location of the barrier(s) will likely affect the ability to block lamprey and provide flood control.

Further background information on some of the Departments' concerns can be found in the enclosed reference documents:

- February 25, 2009, MDNR Fisheries Division Policy & Procedure Number 02.01.002 titled Dams and Barriers
- May 2012 Michigan Stream Team White Paper on Whitewater Parks
- August 23, 2012, MDNR Fisheries Division Letter to the Michigan Department of Environmental Quality (DEQ) regarding DEQ file no. 12-81-0027-P "MichCon Broadway Street MGP Whitewater and Habitat Improvements"

Again, thank you for the opportunity to provide comment in this matter. If you have any questions, please feel free to contact us.

Sincerely,

Daniel Eichinger
Director
Michigan Department of Natural Resources
517-284-6367

Liesl Eichler Clark
Director
Michigan Department of Environment,
Great Lakes, and Energy
517-284-6700

Enclosures
cc/enc: Mr. Jason Chrumka, U.S. Army Corps of Engineers
Ms. Amanda Meyer, U.S. Army Corps of Engineers
Ms. Elizabeth Pelloso, U.S. Environmental Protection Agency, Region 5
Dr. Tammy Newcomb, MDNR
Mr. Jim Dexter, MDNR
Mr. Jay Wesley, MDNR
Mr. Patrick Ertel, MDNR
Mr. Scott Hanshue, MDNR
Mr. Aaron B. Keatley, Chief Deputy Director, EGLE
Ms. Teresa Seidel, EGLE
Mr. Jerrod Sanders, EGLE
Mr. Luis Saldivia, P.E., EGLE
Ms. Amy Lounds, EGLE
Ms. Bethany Matousek, EGLE
Mr. Matthew Occhipinti, P.E., EGLE
Mr. Lucas A. Trumble, P.E., EGLE